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**Itakura et al.**

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- (54) **SEMICONDUCTOR PACKAGE**
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- (\*\*) Term: **15 Years**
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- (51) **LOC (12) Cl.** ..... **13-03**
- (52) **U.S. Cl.**  
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- (58) **Field of Classification Search**  
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361/679.01, 713, 728, 736, 760, 761, 772,  
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CPC . H01L 21/00; H01L 2224/42; H01L 2224/43;  
H01L 2021/00; H01L 2021/02; H01L  
2021/04; H01L 21/4814; H01L 21/4846;  
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2924/1905; H01L 2224/08054; H01L

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G02B 6/4262; G02B 6/428; G02B  
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,458,779 A *	7/1969	Blank .....	H01L 33/343 257/77
3,562,609 A *	2/1971	Addamiano .....	H01L 23/045 257/77

(Continued)

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PC

(57) **CLAIM**

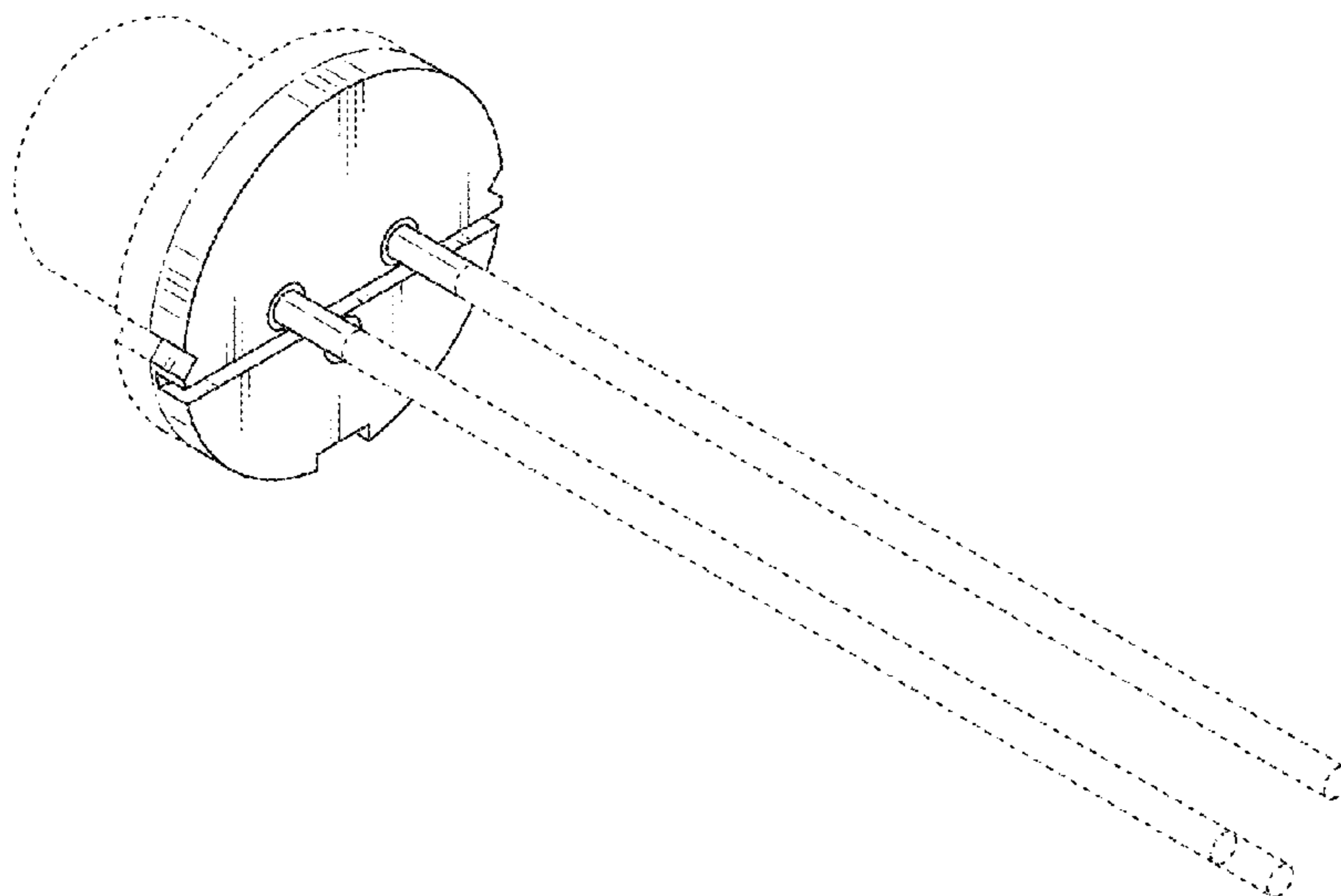
The ornamental design for a semiconductor package, as shown and described.

**DESCRIPTION**

FIG. 1 is a front, top and left side perspective view of a semiconductor package showing our new design;  
 FIG. 2 is a front view thereof;  
 FIG. 3 is a rear view thereof;  
 FIG. 4 is a top view thereof;  
 FIG. 5 is a bottom view thereof;  
 FIG. 6 is a left side view thereof; the right side view being a mirror image thereof;  
 FIG. 7 is a cross sectional view taken along line 7-7 of FIG. 2, with the internal system omitted; and,  
 FIG. 8 is another perspective view thereof, showing the state in use.

The parts shown in even dashed broken lines do not form part of the claimed design.

**1 Claim, 5 Drawing Sheets**



(56)

**References Cited**

## U.S. PATENT DOCUMENTS

4,267,559 A \* 5/1981 Johnson ..... H01L 23/36  
257/100  
D277,955 S \* 3/1985 Takahashi ..... D13/182  
D278,048 S \* 3/1985 Takahashi ..... D13/182  
D278,049 S \* 3/1985 Takahashi ..... D13/182  
D280,812 S \* 10/1985 Takahashi ..... D13/182  
5,266,817 A \* 11/1993 Lin ..... H01L 25/0753  
257/89  
5,459,350 A \* 10/1995 Date ..... H01L 23/495  
257/666  
5,512,784 A \* 4/1996 Fried ..... H01L 23/49562  
257/658  
5,564,819 A \* 10/1996 Yamaguchi ..... H01L 24/97  
362/241  
D420,983 S \* 2/2000 Choi ..... D13/182  
6,147,367 A \* 11/2000 Yang ..... H01L 25/075  
257/81  
6,404,065 B1 \* 6/2002 Choi ..... H01L 23/3121  
257/782  
D476,296 S \* 6/2003 Koizumi ..... D13/182  
D482,666 S \* 11/2003 Kamada ..... D13/182  
D489,695 S \* 5/2004 Komoto ..... D13/182  
D515,520 S \* 2/2006 Komoto ..... D13/182  
D623,546 S \* 9/2010 Nishikawa ..... D10/106.6  
D623,547 S \* 9/2010 Nishikawa ..... D10/106.6  
D623,548 S \* 9/2010 Nishikawa ..... D10/106.6

\* cited by examiner

Fig. 1

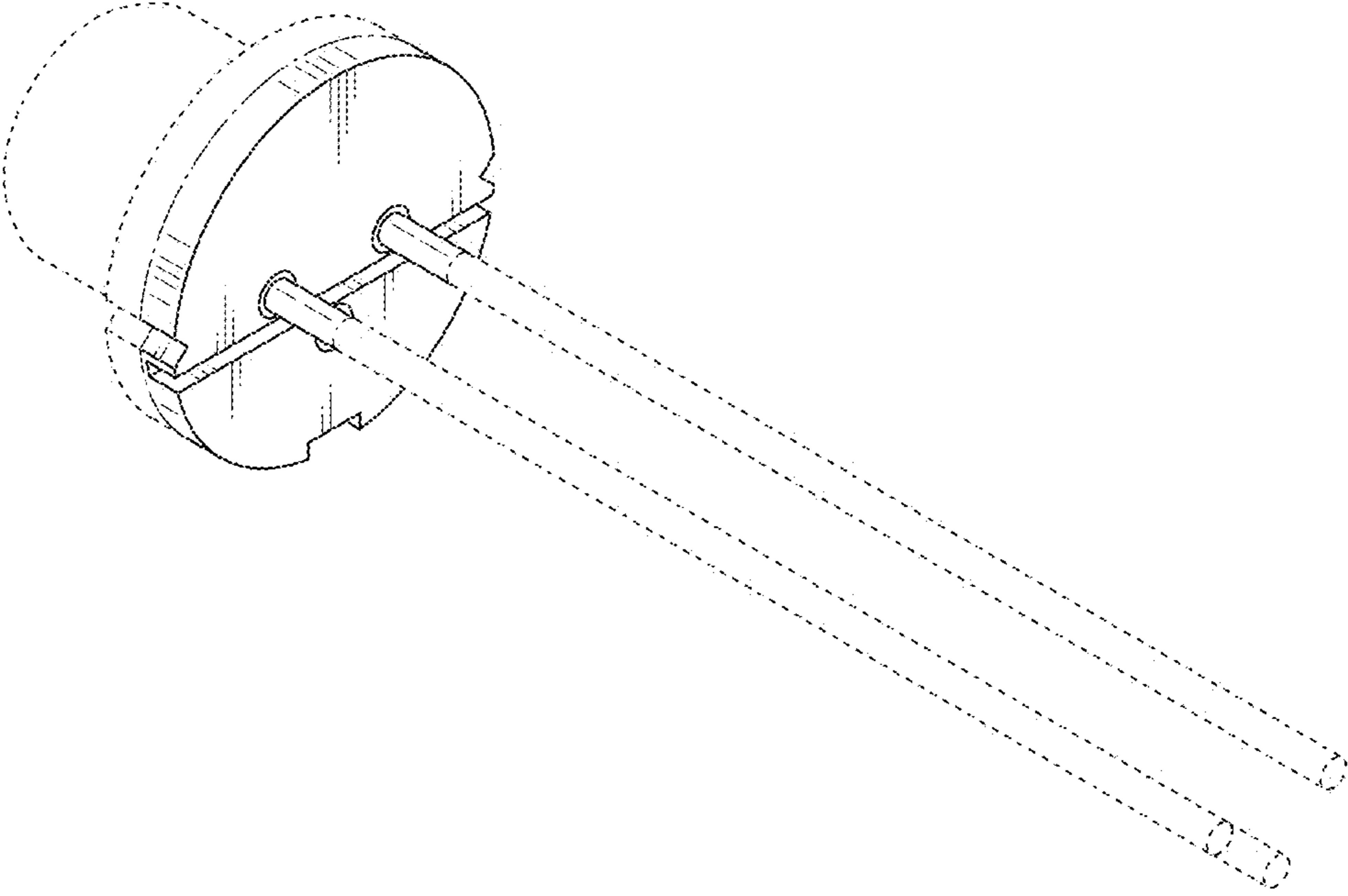


Fig. 2

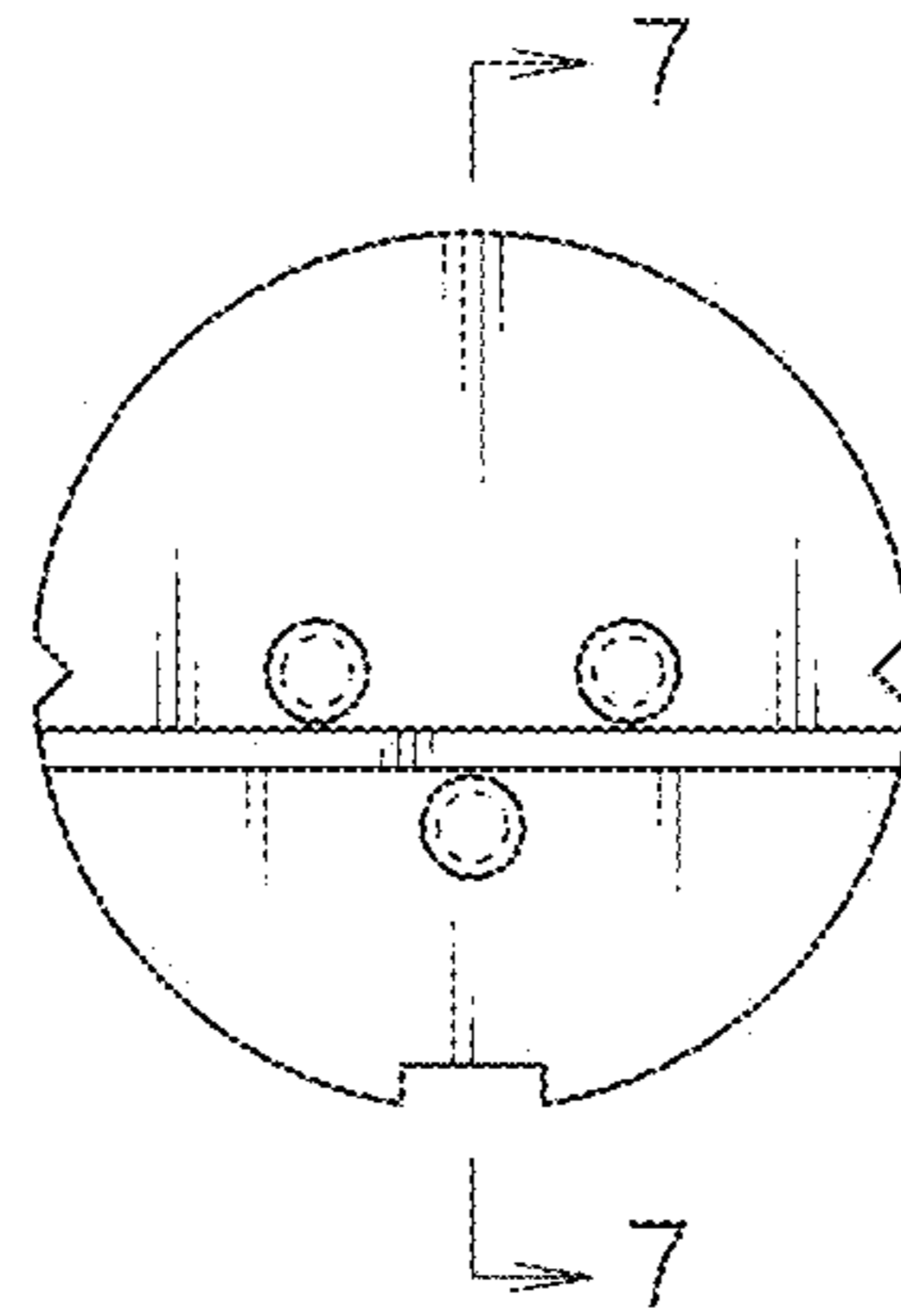


Fig. 3

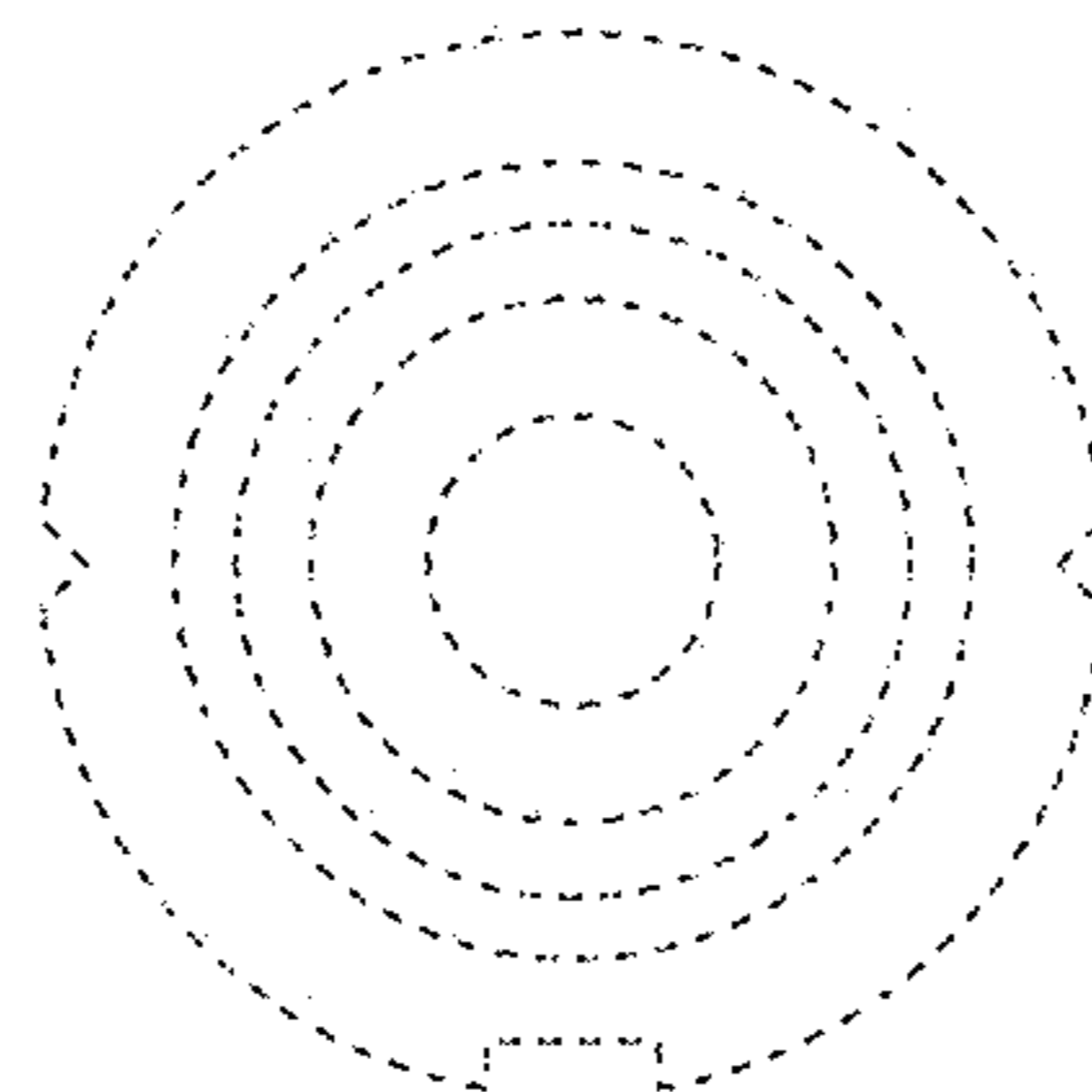


Fig. 4

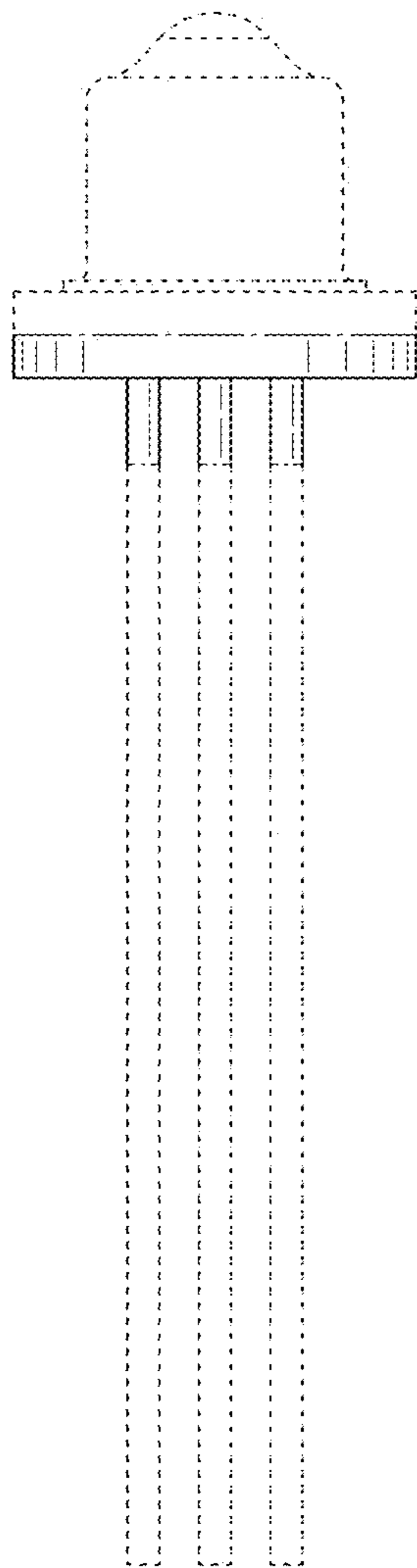


Fig. 5

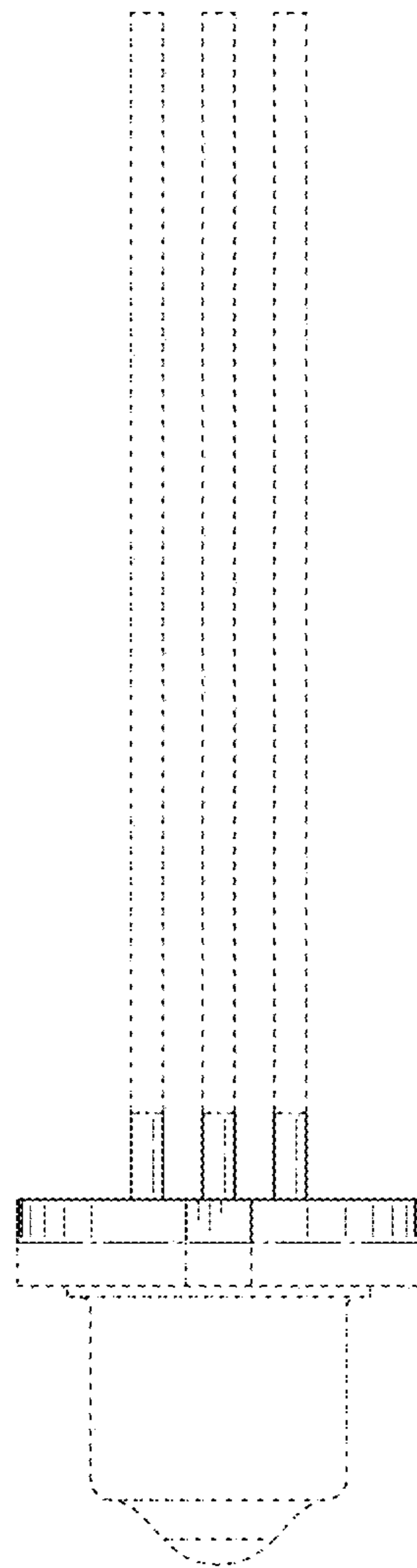


Fig. 6

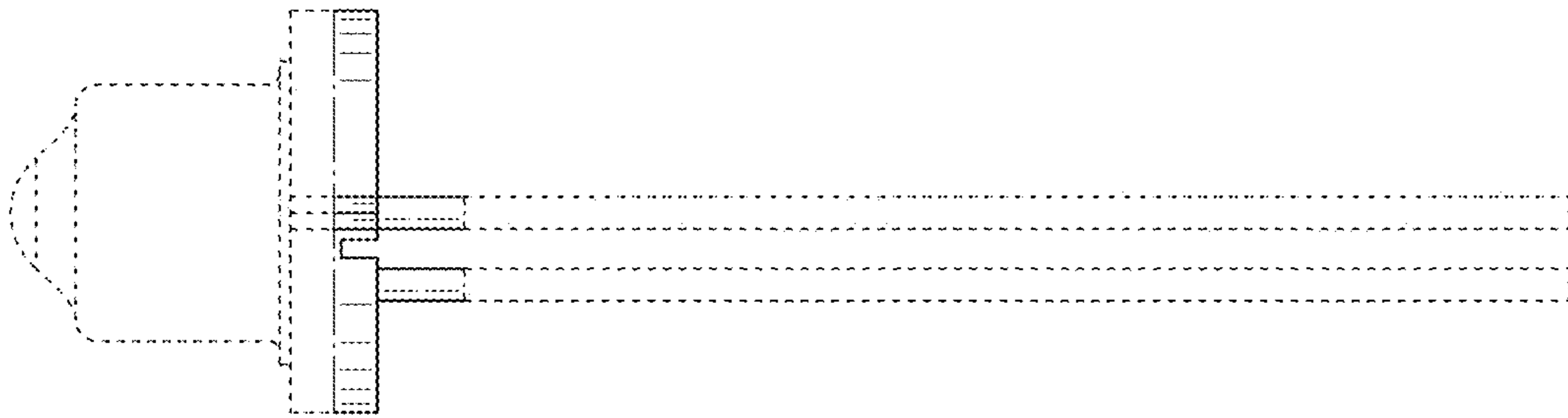


Fig. 7

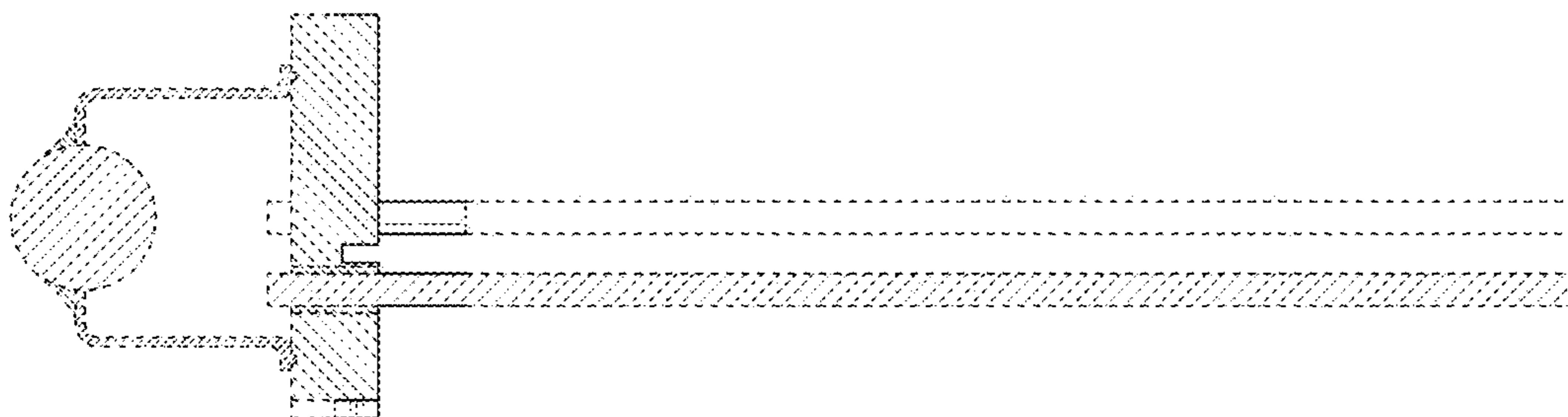


Fig. 8

